

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY (Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

| | | | |
|----------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-----------------------------------------------------------------------|------------------|
| Applicant's or agent's file reference - P2003,0219WO | FOR FURTHER ACTION | | See item 4 below |
| International application No. PCT/EP2004/001122 | International filing date (<i>day/month/year</i>) 06 February 2004 (06.02.2004) | Priority date (<i>day/month/year</i>) 11 April 2003 (11.04.2003) | |
| International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237 | | | |
| Applicant EPCOS AG | | | |

- This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).
- This REPORT consists of a total of 8 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

- This report contains indications relating to the following items:

- | | |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> Box No. I | Basis of the report |
| <input checked="" type="checkbox"/> Box No. II | Priority |
| <input type="checkbox"/> Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> Box No. V | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input checked="" type="checkbox"/> Box No. VI | Certain documents cited |
| <input type="checkbox"/> Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> Box No. VIII | Certain observations on the international application |

- The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

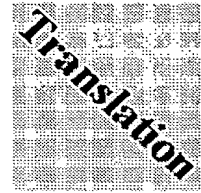
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| The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland Facsimile No. +41 22 740 14 35 | | Date of issuance of this report 02 March 2006 (02.03.2006) Authorized officer Ellen Moyse Telephone No. +41 22 338 89 75 |
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT



WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

| | | |
|-----------------------------------------------------------------------------------|--|-----------------------------------------------------------------|
| Applicant's or agent's file reference P2003, 0219WO | | Date of mailing (day/month/year) |
| International application No. PCT/EP2004/001122 | | International filing date (day/month/year) 06.02.2004 |
| International Patent Classification (IPC) or both national classification and IPC | | Priority date (day/month/year) 11.04.2003 |
| Applicant EPCOS AG | | |

1. This opinion contains indications relating to the following items:

| | | |
|-------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input checked="" type="checkbox"/> | Box No. I | Basis of the opinion |
| <input checked="" type="checkbox"/> | Box No. II | Priority |
| <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability |
| <input type="checkbox"/> | Box No. IV | Lack of unity of invention |
| <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input checked="" type="checkbox"/> | Box No. VI | Certain documents cited |
| <input type="checkbox"/> | Box No. VII | Certain defects in the international application |
| <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

| | |
|----------------------------------------|--------------------|
| Name and mailing address of the ISA/EP | Authorized officer |
| Facsimile No. | Telephone No. |

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/001122

Box No. I

Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

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Box No. II

Priority

1. ☒ The following document has not yet been furnished:
- ☒ copy of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(a)).
 - ☐ translation of the earlier application whose priority has been claimed (Rule 43bis.1 and 66.7(b)).
- Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date in the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43bis.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/001122

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

| | | | |
|-------------------------------|--------|------------------|-----|
| Novelty (N) | Claims | 3, 12 | YES |
| | Claims | 1-2, 4-11, 13-15 | NO |
| Inventive step (IS) | Claims | 3, 12 | YES |
| | Claims | 1-2, 4-11, 13-15 | NO |
| Industrial applicability (IA) | Claims | 1-15 | YES |
| | Claims | | NO |

2. Citations and explanations:

1. Reference is made to the following document:

D1: US-A-4 433 264 (NISHIYAMA HIROSHI ET AL) 21
February 1984 (1984-02-21)

2. The present application does not satisfy the requirements of PCT Article 33(1) because the subject matter of claims 1 and 2 is not novel within the meaning of PCT Article 33(2).

2.1. Document D1 discloses (the references in parentheses are to D1):

component with a piezoelectric functional layer,
having:

- a substrate (31)
 - a first electrode layer (32)
 - a thin growth layer (33) that is structured relative to the first electrode layer
 - a piezoelectric layer (34)
 - a second electrode layer (36)
- (see figure 5 and column 3, lines 3-15).

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

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Box No. V

Reasoned statement under Rule 43bis.1(a)(I) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

Therefore, the subject matter of independent claim 3 is not novel within the meaning of PCT Article 33(2).

- 2.2. With respect to claim 2, document D1 discloses a component wherein the growth layer **(33)** is applied to the first electrode layer **(32)**, is structured relative to the first electrode layer and has a smaller base area than this **(see figure 5)**.

Therefore, the subject matter of claim 2 is not novel within the meaning of PCT Article 33(2).

3. The present application does not satisfy the requirements of PCT Article 33(1) because the subject matter of claims 4-11 and 13-15 does not involve an inventive step within the meaning of PCT Article 33(3).
- The feature of claims 4-11 and 13-15 is only one of several obvious possibilities from which a person skilled in the art would choose according to the circumstances in order to solve the problem of interest, without thereby exercising inventive skill.
4. The subject matter of independent claim 12 is novel within the meaning of PCT Article 33(2).

Document D1 is considered the prior art closest to the subject matter of claim 12.

The subject matter of claim 12 thus differs from the known document D1 in that all of the layers are structured.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/001122

Box No. V

Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

Therefore, the subject matter of claim 12 is novel
(PCT Article 33(2)).

The problem to be solved by the present invention
can thus be seen as that of ensuring that the
materials in the layers are compatible.

The solution to this problem as proposed in claim 12
of the present application involves an inventive
step (PCT Article 33(3)) for the following reasons:
All of the layers are structured.

5. The combination of features contained in dependent
claim 3 is neither known from nor suggested by the
available prior art.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/EP2004/001122

Box No. VI

Certain documents cited

1. Certain published documents (Rule 43bis.1 and 70.10)

| Application No. Patent No. | Publication date (day/month/year) | Filing date (day/month/year) | Priority date (valid claim) (day/month/year) |
|-------------------------------|--------------------------------------|---------------------------------|-------------------------------------------------|
|-------------------------------|--------------------------------------|---------------------------------|-------------------------------------------------|

2. Non-written disclosures (Rule 43bis.1 and 70.9)

| Kind of non-written disclosure | Date of non-written disclosure (day/month/year) | Date of written disclosure referring to non-written disclosure (day/month/year) |
|--------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------|
|--------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------|

See form 210